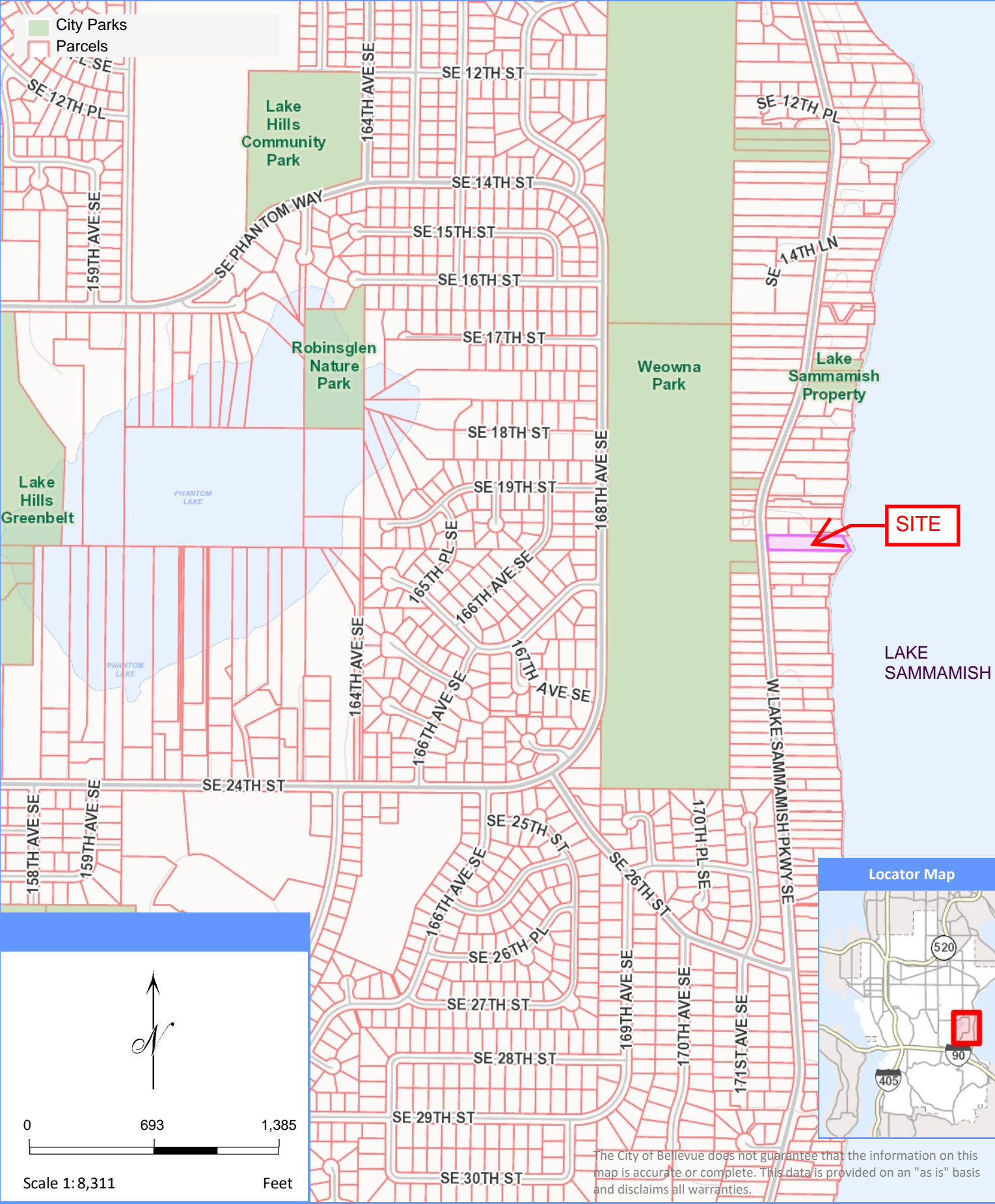
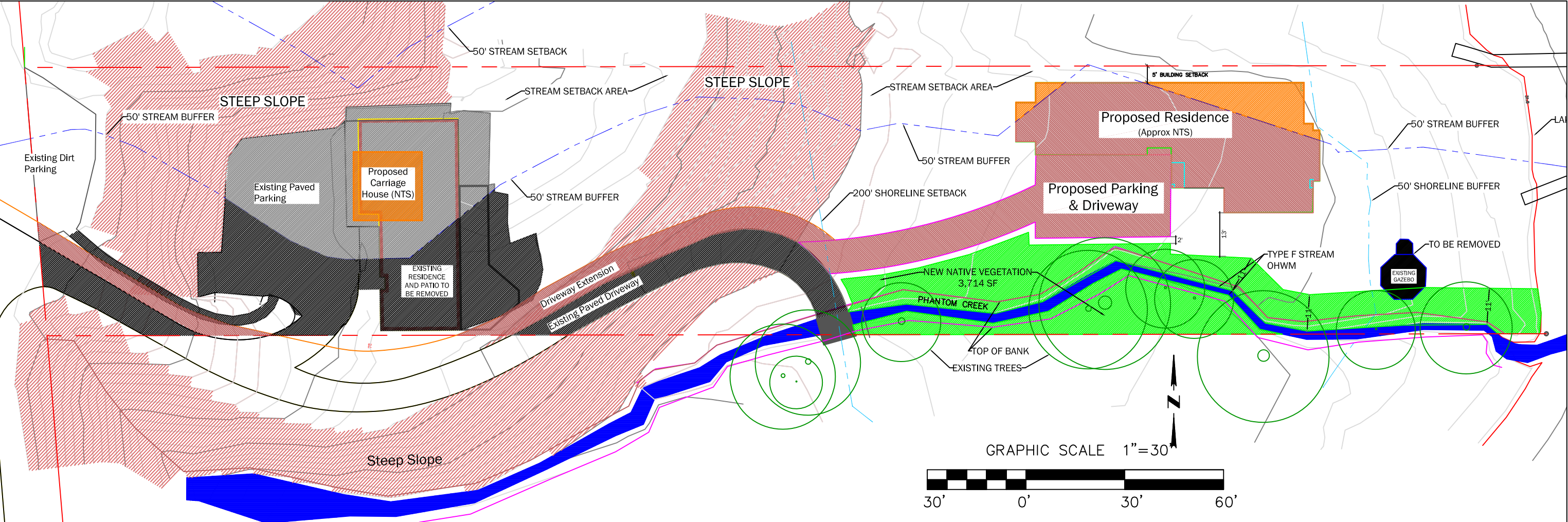
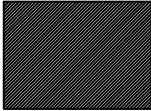
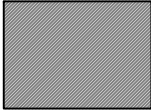
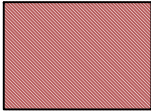
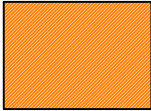
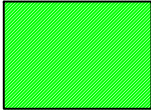


VICINITY MAP





EXISTING IMPERVIOUS SURFACE IN STREAM BUFFER		4,233 SF (1,531 SF TO BE ELIMINATED)
EXISTING IMPERVIOUS SURFACE IN STREAM SETBACK		2,861 SF (1,666 SF TO BE ELIMINATED)
PROPOSED IMPERVIOUS SURFACE IN STREAM BUFFER		4,772 SF TO BE ADDED
PROPOSED IMPERVIOUS SURFACE IN STREAM SETBACK		1,015 SF TO BE ADDED
PROPOSED NATIVE PLANTINGS IN STREAM BUFFER		3,714 SF TO BE ADDED

TYPE F STREAM BUFFER AND SETBACK CHANGES

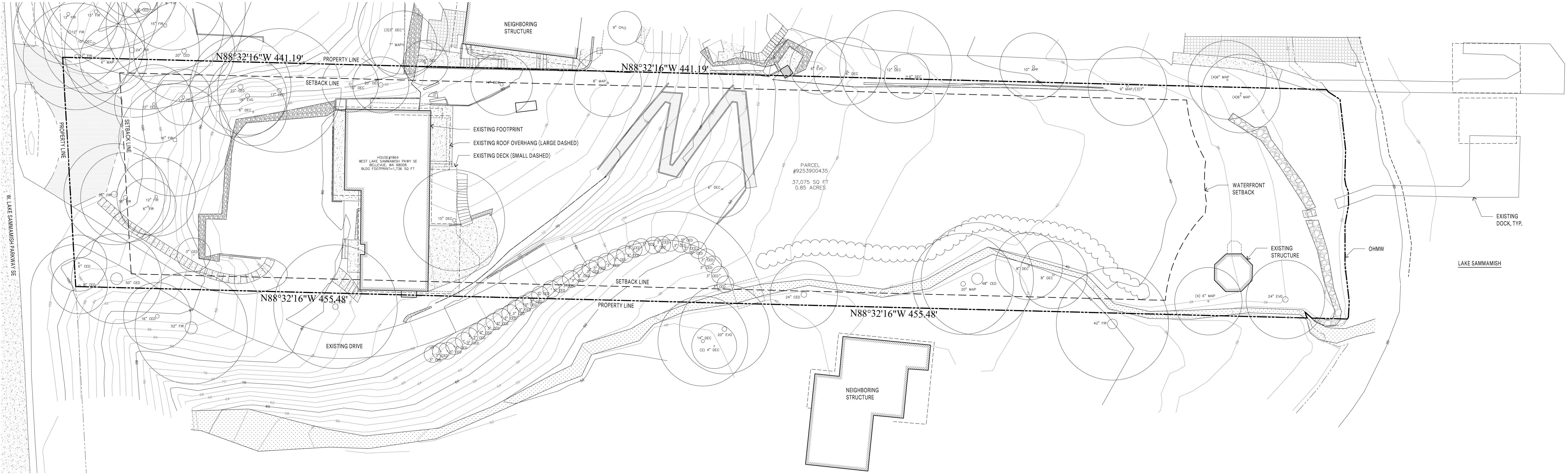
Stream Buffer and Setback	--- Buffer ---			--- Setback ---			Total Change
	Existing	Proposed	Change	Existing	Proposed	Change	
Impervious Surface, 0-50'	4233	7474	3241				
Lawn/Garden/Weeds, 0-50'	20176	13221	-6955				
Native vegetation 0-50'	1476	5190	3714				
Impervious Surface, 50'-100'				2861	2210	-651	
Lawn/Garden/Weeds, 50'-100'				6074	6725	651	
Native vegetation 50-100'				2202	2202	0	
Impervious Surface, 0-100'							2590
Lawn/Garden/Weeds, 0-100'							-6304
Native vegetation 0-100'							3714

LAKE SAMMAMISH SETBACK CHANGES

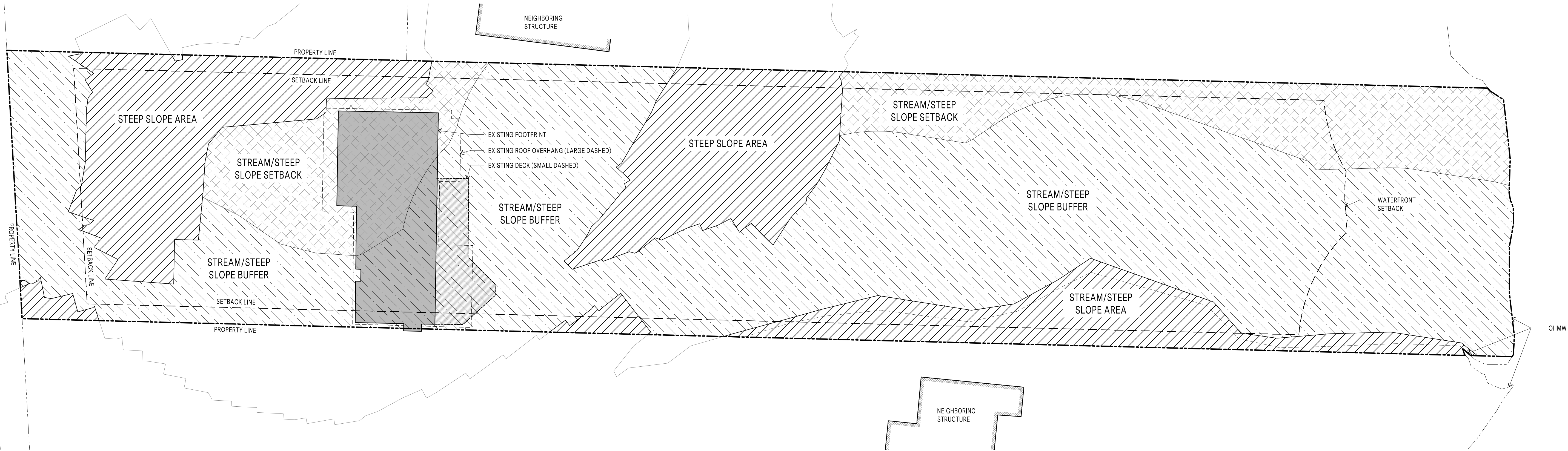
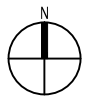
Shoreline Area	Existing	Proposed	Change
Impervious Surface, 0-50'	175	0	-175
Lawn/Garden/Weeds, 0-50'	4286	3755	-531
Native vegetation 0-50'	0	706	706

MITIGATION PLAN - LAYOUT

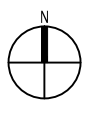
APPLICANT: TARA JOHNSON
1864 W. Lake Samm. Pkwy SE
Bellevue Washington 98008



SV 1864 WEST LAKE SAMMAMISH PARKWAY SOUTHEAST | SITE PLAN - EXISTING CONDITIONS
1/16" = 1'-0"



SB 1864 WEST LAKE SAMMAMISH PARKWAY SOUTHEAST | SITE PLAN - BUFFERS AND SETBACKS
1/16" = 1'-0"



**CRITICAL AREAS REPORT
VEGETATION MANAGEMENT PLAN AND MONITORING REPORT**

**JOHNSON RESIDENCE
REDEVELOPMENT**

**1864 West Lake Sammamish Parkway SE
Bellevue Washington 98008
(Parcel # 9253900435)**

Prepared by:

Cedarock Consultants, Inc.
19609 244th Avenue NE
Woodinville, Washington 98077

Prepared for:

Tara Johnson
1864 West Lake Sammamish Parkway SE
Bellevue Washington 98008

November 23, 2020 (rev. 3)

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APPENDICES

Bond Quantity Worksheet
Mitigation Planting Plan and Details
Site Survey and Setbacks

REPORT AUTHOR

This report was prepared by Carl Hadley, a professional aquatic biologist with over 30 years of experience evaluating effects of changing land use on aquatic habitat. Mr. Hadley is the principal biologist with Cedarock Consultants, Inc.

1.0 INTRODUCTION

1.1 Project Description

An existing home located at 1864 West Lake Sammamish Parkway SE will be razed and replaced with two all new structures. A shared driveway will be widened for safety and stability purposes. The original home was constructed in 1943 on a small terrace between steep slopes to the east and west. This structure will be removed and replaced with a smaller carriage house. The rest of the vacated area will be converted to lawn or garden. A larger replacement house in line with structures in the neighborhood will be constructed in a flat stable area closer to Lake Sammamish. Total lot coverage will be 35% (per LUC 20.20.010).

The entire property (0.85 acres) is encumbered with critical areas (Phantom Creek, Lake Sammamish, steep slopes) and their buffers/setbacks (see Survey and Setbacks in Appendix). Variance from standard critical areas code is needed to allow development. Although a reasonable use exception (LUC 20.25H.190) allows up to a maximum of 3,000 sq.ft. of permanent disturbance, this disturbance level is greatly exceeded under existing conditions and would be impossible to achieve, especially with the existing shared driveway. Under existing conditions approximately 34,000 sq.ft. of the site (91%) is already considered disturbed (impervious house, driveway and patios; graded lawn and landscaping areas). As an alternative, the homeowner is proposing to return portions of the property not needed for the new home to a more natural state so that permanent disturbance is reduced.

No clearing and only minimal vegetation removal (lawn) is necessary to construct the house. No trees will be removed. The house is being proposed within a stable area of existing lawn on the lower terrace. Driveway widening will occur on the side away from the creek. New impervious surface on the subject property is being mitigated with a greater than 1:1 enhancement with new native plantings adjacent to Phantom Creek in an area that is currently unplanted or covered with exotic species (ivy and blackberry). Mitigation for widening of the driveway on the neighbor's property will be mitigated under a separate permit to be applied for by the neighbor. The property is adjacent to Lake Sammamish, but all new structures will be located outside of the 50-foot Lake Sammamish Vegetation Management Area (Figure 1).

1.2 Purpose of this Report

This report was prepared to evaluate environmental effects of the proposed project action on critical areas and the Shoreline. Mitigation is proposed where necessary to offset adverse impacts.

1.3 Report Author

This report was prepared by Carl Hadley, a professional biologist with over 30 years of experience in western Washington. Geotechnical evaluation was provided by Phil Haberman a licensed professional engineer at Cobalt Geosciences.



Figure 1. Johnson property on Lake Sammamish.

2.0 EXISTING CONDITIONS

This section provides a description of critical areas on and within 100-feet of the property under existing conditions. Critical areas within 100-feet of the work area include the Lake Sammamish Shoreline Management Area, steep slopes, Phantom Creek (Type F) and habitat associated with species of local, state, and federal importance (Figure 1). Adjoining properties include similar critical areas.

2.1 Lake Sammamish

Lake Sammamish is a shoreline of the state (classified as a Type S water under the Bellevue land use code LUC 20.25H.075.B.1). The Johnson property abuts Lake Sammamish. The current house and proposed carriage house are both greater than 300-feet from ordinary high water (OHW). The proposed house starts about 60-feet from OHW. Existing plants in the Vegetation Conservation Area (VCA) consist solely of a few groups of 6" maples, one 24" fir tree, and lawn. No work other than removal of a long-standing gazebo and mitigation planting is proposed within the regulated VCA or within the regulatory setback of Lake Sammamish. No trees will be removed.

2.2 Streams

Phantom Creek runs along the south edge of the property before discharging into Lake Sammamish. Phantom Creek is a fish-bearing stream (Type F) with known use by coho salmon and resident trout. The riparian buffer is dominated by non-native plants including Himalayan blackberry, English ivy, and reed canarygrass. A number of medium to large native trees (6" to 48") are also present within 10 feet of the creek. The 50-foot buffer and 50-foot setback encompass almost the entire property.

2.3 Wetlands

A cursory examination of the property and a review of public records found no evidence of wetlands on the site. No seeps or wetland plants were noted. Geotechnical exploration found no evidence of shallow groundwater under the site other than what was associated with the lake¹.

2.4 Geologic Hazard Areas

The property contains several slopes in excess of 40 percent. Potential geologic hazards on and near the site were examined and evaluated by a licensed geotechnical engineer¹. They found no evidence of landslide hazards as defined under LUC 20.25H.120A(1) present on the subject property.

2.5 Species of Local Importance

The wildlife habitat review consisted of a site-specific survey and consultation with the Washington Department of Fish and Wildlife database². The site and surrounding lands have been developed mostly as moderate-density single-unit residential housing (Figure 2). Some suitable wildlife habitat for terrestrial and avian species is found in the area, in particular within a small forested area covering a steep slope at the western end of the property. However, overall wildlife habitat quality has been significantly modified by past clearing, fragmentation, and introduction of non-native landscaping species (e.g. English ivy, English holly, Himalayan blackberry, and turf grasses).

It is the larger trees at the west end of the site and a few along Phantom Creek near Lake Sammamish that provide the majority of wildlife habitat in the area. Most of the undercanopy and groundcover near Phantom Creek has been removed from under the large trees and replaced with non-native groundcovers (e.g. English ivy, turf grass). The area where the new house will be built consists entirely of lawn (Figure 2).

¹ Cobalt Geosciences. 2020. Geotechnical investigation, Proposed Residence. August 14, 2020.

² Washington Department of Fish and Wildlife. 2020. Priority habitat and species map.



Figure 2. General habitat conditions in September 2020 looking west (left) at building location in lawn, and west (right) at Phantom Creek.

Species that may be expected to be found intermittently on this site are deer, coyote, Douglas and eastern grey squirrels, other assorted rodent species, raptors, woodpeckers, and song birds, including species of local importance listed by the City of Bellevue (LUC 20.25H.150.A). There are several moderate to large conifer and deciduous trees suitable for eagle, hawk, and owl perching on and near the site. No nesting activity by sensitive species is known to have occurred in the recent past (WDFW 2020). Larger trees in the area provide suitable perching sites for bald eagles, but none of these trees are reported to be critical nesting or roosting habitat sites.

Chinook and coho salmon are found in Lake Sammamish and coho are found in Phantom Creek.

2.6 Flood Hazard Areas

Land subject to a one-hundred-year flood is present on the property below 36-feet in elevation (FEMA AE). No work other than mitigation planting is proposed in this area.

3.0 PROJECT EFFECTS ON CRITICAL AREAS

Critical areas are defined in the City of Bellevue under BCC LUC 20.25H.025. They include streams, wetlands, shorelines, geologic hazards, habitat and species of local importance, flood hazard areas, and buffers. Existing conditions of each critical area on or near the site are described in Section 2.0 of this report. This section describes any actions that will be taken within or near the critical area and any proposed changes to the functions or values that will occur. Critical Area functions and values for fish and wildlife species are based on WDFW guidelines³ and other best available science⁴.

³ Knutson, K. L. and V. L. Naef. 1997. Management recommendations for Washington's priority habitats: riparian. Washington Department of Fish and Wildlife, Olympia, WA. 181p.

⁴ For example, see Citations of Recommended Sources of Best Available Science for Designating and Protecting Critical Areas. 2002. Washington State Office of Community Development, Olympia, WA. and City of Bellevue's 2005 Best Available Science (BAS) Review (Herrera 2005).

3.1 Streams

Phantom Creek is located on-site. The stream will not be directly affected in any way. However, almost the entire site is located with the stream buffer and setback so significant disturbance will occur in this area. Because of the size of the proposed residence, it was decided to place it on the flat terrace closer to the lake rather than between two steep slopes where the current residence is located. Most of the house and driveway will be located within the stream buffer and as close as 6-feet to the creek. No vegetation other than lawn will be impacted.

New development within the stream buffer and setback will be mitigated in several ways. The existing house, concrete patio, and paved parking area will all be eliminated and replaced with pervious surfaces including lawn and garden areas. In addition, an area of stream buffer greater than the proposed area of new impervious surface will be converted from non-native/invasive species to native plants. Overall, the area of disturbance within the stream buffer will be reduced as shown in Table 1. A Vegetation Management Plan meeting LUC 20.25H.055 requirements is incorporated in this report (Section 5.0).

Because no existing native riparian vegetation will be disturbed, the only impact will be to previously disturbed areas (mainly lawn), and with the gain in native vegetation immediately adjacent to the creek, the overall effect will be beneficial for the Phantom Creek.

Table 1. Stream Buffer and Setback Changes under the Proposed Action.

Condition	Buffer (0 to 50')			Setback (50' to 100')			Total Change
	Existing	Proposed	Change	Existing	Proposed	Change	
Impervious Surface	4,233	7,474	+3,241				
Lawn/Garden	20,176	13,221	-6,955				
Native vegetation	1,476	5,190	+3,714				
Impervious Surface				2,861	2,210	-651	
Lawn/Garden				6,074	6,725	+651	
Native vegetation				2,202	2,202	0	
Impervious Surface							2,590
Lawn/Garden							-6,304
Native vegetation							3,714

3.2 Wetlands

There are no wetlands, seeps, or springs on the site therefore the project is not expected to have any adverse effect on wetlands.

3.3 Shorelines

Lake Sammamish is a shoreline of the state. No development is proposed with the Vegetation Management Area and no trees will be removed from this area. The only work to be completed in this area will be the removal of an existing cupola and installation of native planting associated with Phantom Creek. This work will also provide a function benefit to the shoreline area as quantified in Table 2. Because of the lack of proposed disturbance, and the addition of native plantings, the project is expected to have a beneficial effect on the shoreline.

Table 2. Vegetation Management Area Changes

Vegetation Management Area (0-50')	Existing	Proposed	Change
Impervious Surface	175	0	-175
Lawn/Garden	4286	3755	-531
Native vegetation	0	706	706

3.4 Geologic Hazard Areas

Under the proposed action the main house will be relocated out of the steep slope buffer, but the smaller carriage house will remain. No trees on the site will be disturbed. While stormwater calculations are not currently available, the project will meet City of Bellevue stormwater management requirements when complete.

Project geotechnical engineers have reviewed the site and proposed action and provided recommendations for work near the steep slopes to help avoid adverse effects on slope stability and erosion. With implementation of these measures, they concluded that *“the slope areas are stable and will not be adversely affected by the proposed development”*⁵.

3.5 Species of Local Importance

All new development will take place within areas of existing lawn. No native vegetation or any trees will be removed, and no new human activities will be introduced to the area. 4,769 sf of new native tree, shrubs and groundcovers will be installed within the shoreline area and adjacent to Phantom Creek where they will provide the highest benefit. Over time, the project will increase native habitat. Overall, there will some short term disturbance, but no significant long term adverse effects on upland wildlife habitat.

Sensitive fish species are found in Lake Sammamish and Phantom Creek. The project will not change the quantity or quality of water being delivered to either waterbody, but will have a beneficial effect on riparian functions and values near both waterbodies.

⁵ Cobalt Geosciences. 2020.

3.6 Flood Hazard Areas

No work is proposed within the flood hazard area. The project will have no effect on flood storage volume.

3.7 Critical Areas Effects Summary

The proposed action will take place within an area that is entirely encumbered with stream, steep slope, and lake critical areas and buffers but has been disturbed since the 1940's when the site was cleared and graded for the existing house. The project will avoid the need to remove any native vegetation or trees. There are no wetlands within more than 200-feet of the proposed disturbance. Steep slopes are deemed stable. All proposed disturbance will occur within an existing lawn and building footprint. With proposed avoidance measures, no significant long-term adverse effects on critical areas are expected. Minor impacts associated with new impervious surfaces are being mitigated by planting and monitoring new native vegetation adjacent to Phantom Creek and Lake Sammamish.

4.0 MITIGATION

The primary means of mitigation for redevelopment of this lot has been avoidance of new disturbance by working only in the existing building footprint and existing lawn. Compensatory mitigation in the form of planting new native trees, shrubs, and groundcovers in the riparian and shoreline buffer is proposed to help offset any adverse impacts of new impervious surfaces.

4.1 Impact Avoidance

The following actions are proposed to avoid impacts to critical areas:

- No disturbance is proposed within the Shoreline Vegetation Management Area, geologic hazard area, stream, lake, wetland, or floodplain.
- No new land disturbance is proposed, all work is proposed within the existing building footprint and existing lawn.
- No trees or native vegetation will be disturbed.

4.2 Impact Minimization

The following actions are proposed to minimize impacts:

- The existing house, yard, walkway, and driveway footprint in the steep slope buffer will be reused to help avoid new disturbances to the property.
- Work within the steep slope and stream buffers will be limited to previously disturbed areas.
- Stormwater will be managed to avoid impacts to steep slopes. The design is not currently ready for review but will ultimately meet all City of Bellevue requirements.

4.3 Compensatory Mitigation

The following actions are proposed to mitigate for impacts:

- An existing concrete patio, gazebo, and a portion of the existing house (1,531 sf) will be removed from within the stream buffer.
- Approximately 3,700 sf of exotic plant species will be removed from the stream buffer.
- Impervious surface will be reduced by 1,666 sf within the stream setback area.
- 3,714 sf of new native plants will be added (>1.1:1 for new impervious surface within the stream buffer and >1.4:1 for new impervious surface within the stream buffer plus setback area).
- New plantings will be maintained and monitored for a period of five years.

5.0 VEGETATION MANAGEMENT PLAN

A Vegetation Management Plan is provided for allowing the applicant to add new impervious surface within the stream buffer and setback. No vegetation other than lawn and non-native, invasive species will be removed. As part of the mitigation program, an area of stream buffer and VMA greater than the area of disturbance will be planted with native trees, shrubs and groundcovers where the ground is currently covered mainly with non-native ivy and blackberry.

Removal of vegetation from a stream buffer requires a Vegetation Management Plan as described in LUC 20.25H.055.C.3.i. Requirements are listed below along with a description of how the plan complies with the requirements.

- (1) A description of existing site conditions, including existing critical area functions and values: Existing site conditions, critical area functions, and values are discussed in Section 2 of this report;
- (2) A site history: The site has been in continuous use as a residence since 1943.
- (3) A discussion of the plan objectives: The Vegetation Management Plan is designed for the purpose of allowing the applicant to remove up to 7,000 sf of lawn and weeds from the stream buffer, another 600 sf of lawn and weeds from the setback area, and replace this with approximately 5,800 sf of new house and paved driveway.
- (4) A description of all sensitive features: Critical habitat is described in Section 2 of this report.
- (5) Identification of soils, existing vegetation, and habitat associated with species of local importance present on the site: See Section 2 of this report and the Geotech Report (Cobalt GeoSciences 2020) for more information on soils.
- (6) Allowed work windows: Removal of lawn is not subject to work windows. All other grading and construction will be subject to standard City of Bellevue construction requirements.
- (7) A clear delineation of the area within which clearing and other vegetation management practices are allowed under the plan: This work area is described in the Mitigation Plan (Sheet 1).
- (8) Short- and long-term management prescriptions, including restoration and revegetation requirements: Site restoration shall include:

- a. Removal of 3,714 sf of noxious and invasive plant species adjacent to Phantom Creek and replacement with 3,714 sf of native species as shown in the Mitigation Plan (Sheets 1—3).
- b. Removal of 1,531 sf of existing impervious surface from the stream buffer (replaced with lawn or garden) and another 1,666 sf of existing impervious surface from the stream buffer setback (replaced with lawn or garden [~1,700 sf] and carriage house [~380sf]).
- c. Vegetation maintenance is described in Section 6.
- d. Vegetation monitoring is described in Section 7.

This Vegetation Management Plan results in a net gain of native plantings on the site and adjacent to Phantom Creek without any loss of native plants or any trees. Over time this vegetation will have significantly better function than the vegetation which it will replace. Implementation of this plan is not expected to significantly diminish the functions and values of the critical areas (stream or steep slopes) or adversely alter the existing forest and habitat characteristics of the site.

6.0 VEGETATION MAINTENANCE

Re-establishing native vegetation adjacent to the creek is the goal of this maintenance plan. Activities required to maintain new plantings include initial watering of the new plants, and periodic removal of non-native vegetation that could damage or shade out the young plants.

- New plantings shall be periodically watered (once per month) from May through mid-October during the first season. A potable water source is available for this use.
- Due to the aggressively invasive habit of non-native species such as English ivy and Himalayan blackberry that can girdle and topple young trees and overwhelm other plantings, maintenance, to include removal of these species from within a radius of 3 feet of each planting area shall be completed at minimum twice each year.
- The use of herbicides and pesticides on the steep slopes is prohibited unless given written permission by the City of Bellevue.
- All work shall be performed by hand with the lightest possible equipment.

7.0 VEGETATION MONITORING

Due to the small size and uncomplicated nature of the proposed planting project, and lack of wetland involvement, the plantings shall be self-maintained and self-monitored by the homeowner for five years. Vegetation monitoring shall consist of plant inspection to determine the health and vigor of each planted tree. All replacement plants shall be inspected once a year for five years to determine the health of each specimen. Dead or dying plants shall be replaced the following fall. Plant species substitutions may be made if site conditions are believed responsible for plant mortality. Replacement species must be approved by the City.

Annual monitoring reports shall be submitted to the City of Bellevue, Attn: Environmental Planning Manager by October 31st in each of the five years. Photos showing all of the trees shall be included in the monitoring reports to document conditions. The following schedule and performance standards apply and will be evaluated in the report for each year:

Year 1 (from date of plant installation)

- 100% survival of all installed plants and/or replanting in following dormant season to reestablish 100% of original plantings.
- Less than 10% coverage of invasive plants in planting area.

Year 2 (from date of plant installation)

- At least 90% survival of all installed material (100% of trees).
- Less than 10% coverage of planting area by invasive species or non-native/ornamental vegetation.

Year 3, 4, & 5 (from date of plant installation)

- At least 85% survival of all installed material (100% of trees).
- At least 35% (Yr3), 50% (Yr4), 70% (Yr5) coverage of the planting area by native plants in each year respectively.
- Less than 10% coverage by invasive species or non-native/ornamental vegetation.

8.0 CONTINGENCY PLAN

A contingency plan would be implemented if necessary. Contingency plans would be developed based on the specific failure to meet success standards described in Section 7 of this plan. Contingency plans could include additional plant installation and plant substitutions including type, size, and location.

If monitoring results indicate that any of the performance standards are not being met, it may be necessary to implement all or part of a contingency plan. Careful attention to detail and site maintenance is essential in ensuring that problems do not arise. Should any of the site fail to meet success criteria, a contingency plan will be developed and implemented with City approval. Such plans are prepared on a case-by-case basis to reflect the failed mitigation characteristics.

Contingency/maintenance activities may include:

- Engineering plan revisions for drainage, slope protection, etc.
- Replacing all plants lost to browsing, drought, or disease, as necessary.
- Replacing any plant species with a 20 percent or greater mortality rate with the same species or similar species approved by the City Biologist.
- Irrigating the planting area only as necessary during dry weather if plants appear to be too dry, with a minimal quantity of water.
- Streambank erosion protection measures.

- Removing trash or other undesirable debris from the buffer areas as necessary.

9.0 MITIGATION COST ESTIMATE

A cost estimate for the mitigation planting, maintenance, and monitoring based on the King County spreadsheet updated to 2020 prices is \$17,780. Details are provided in the appendix.

10.0 BUFFER MODIFICATION REQUEST

The proposed new house and driveway footprint within the steep slope buffer is outside of, and is larger than the existing house and driveway footprint within the steep slope buffer. Therefore, a buffer modification is required. Decision criteria are described in LUC 20.25H.255.A and .B. and listed below with an analysis of how the project meets the criteria. Mitigation measures are described above.

LUC 20.25H.255.A

- (1) The modifications and performance standards included in the proposal lead to levels of protection of critical area functions and values at least as protective as application of the regulations and standards of this code;

Implementation of the standard code requirements would not allow development anywhere on the site except the existing house footprint. This footprint is located within a steep slope buffer, steep slope setback, and stream buffer. The owners would be required to build a house that is much smaller than structures currently found on similar lots in the neighborhood. The existing degraded stream buffer adjacent to Phantom Creek would remain. This buffer which consists almost entirely of lawn and invasive non-native species provides very low functional protection to the creek or habitat value. Under the proposed action, the house would be moved to a flat location consisting entirely of lawn. The required mitigation for the permanent loss of buffer area would be permanent enhancement of Phantom Creek stream bank riparian cover leading to a net gain in functions and values of the creek and Lake Sammamish shoreline area.

- (2) Adequate resources to ensure completion of any required mitigation and monitoring efforts;

Costs to install the proposed enhancement plants will be minimal relative to the project as a whole. The applicant will live on-site and will monitor and maintain the vegetation. The owners will if required also post a bond or provide other assurance that all required mitigation and monitoring efforts will be completed.

- (3) The modifications and performance standards included in the proposal are not detrimental to the functions and values of critical area and critical area buffers off-site;

The project will reduce impervious surface near steep slopes that are shared with neighbors, thus reducing erosion potential. The stream in the work area is located on-site so buffer impacts will not reduce any off-site functions of the stream.

- (4) The resulting development is compatible with other uses and development in the same land use district.

The proposed house will be similar in size and style to other residences located nearby. It will be no closer to the creek than neighboring residences. The developed property will have a lower developed footprint than many other properties in the vicinity.

LUC 20.25H.255.B

- (1) The proposal includes plans for restoration of degraded critical area or critical area buffer functions which demonstrate a net gain in overall critical area or critical area buffer functions;

The proposal includes plans for restoring the Phantom Creek buffer at a ratio in excess of 1:1 for proposed impacts to the buffer. Because the impacts are entirely within an existing lawn, and enhancements will replace the existing English ivy and Himalayan blackberry covered stream buffer with a mix of native trees, shrubs, and groundcovers a net gain in both wildlife and stream habitat functions and values is expected.

- (2) The proposal includes plans for restoration of degraded critical area or critical area buffer functions which demonstrate a net gain in the most important critical area or critical area buffer functions to the ecosystem in which they exist;

Riparian buffers perform many functions essential to fish survival and productivity. Vegetation in riparian areas shades streams and maintains cool water temperatures needed by most fish native to the Pacific Northwest. Plant roots stabilize stream banks and help control erosion and sedimentation. Adjacent vegetation creates overhanging cover for fish. Riparian habitat contributes leaves, twigs, and insects to streams, thereby providing basic food and nutrients that support fish and aquatic wildlife. Large trees that fall into streams create pools, riffles, backwater, small dams, and off-channel habitat that are needed by fish for cover, spawning, rearing, and protection from predators. Pools help maintain riffles, where gravel essential for spawning accumulates. Riparian vegetation, litter layers, and soils filter incoming sediments and pollutants, thereby assisting in the maintenance of high water quality needed for healthy fish populations. Riparian habitat moderates stream volumes by reducing peak flows during flooding periods and by storing and slowly releasing water into streams during low flows (Knutson and Naef 1997). The native plantings that will replace currently degraded conditions in the buffers will improve all potential buffer functions.

- (3) The proposal includes a net gain in stormwater quality function by the critical area buffer or by elements of the development proposal outside of the reduced regulated critical area buffer;

The expanded native vegetation buffer adjacent to Phantom Creek will provide a better stormwater filter than under the existing degraded conditions including lawn down to water's edge. Reducing lawn coverage adjacent to the creek will also reduce the need for chemicals and fertilizers.

- (4) Adequate resources to ensure completion of any required restoration, mitigation and monitoring efforts;

See # 2 above

- (5) The modifications and performance standards included in the proposal are not detrimental to the functions and values of critical area and critical area buffers off-site;

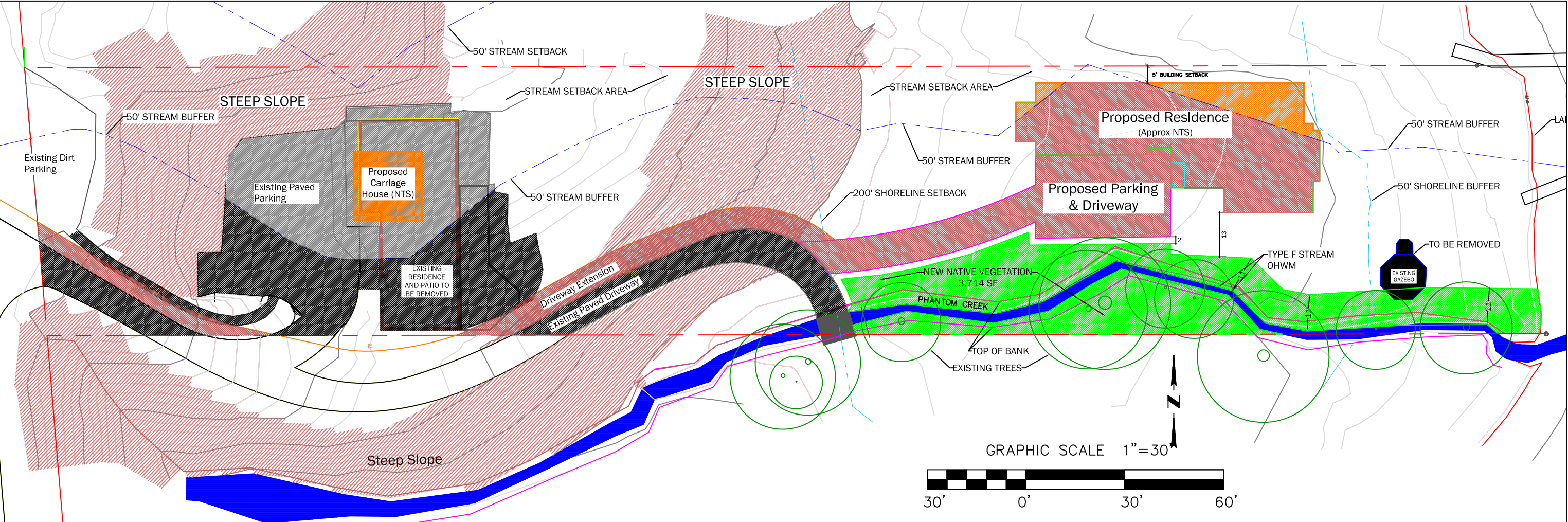
See # 3 above.

- (6) The resulting development is compatible with other uses and development in the same land use district.

See # 4 above

APPENDIX

Critical Areas Mitigation Bond Quantity Worksheet					
Project Name: Johnson		Date: 11/17/2020		Prepared by: Carl Hadley	
Project Number:		Project Description: House Mitigation Buffer Planting			
Location: 1864 W. Lk. Samm. Pkwy SE		Applicant: Tara Johnson		Phone:	
PLANT MATERIALS (includes labor cost for plant installation)					
Type	Unit Price	Unit	Quantity	Description	Cost
PLANTS: Bulbs	\$1.00	Each	0		\$ -
PLANTS: Potted, 4" diameter, medium	\$5.00	Each	929		\$ 4,645.00
PLANTS: Container, 1 gallon, medium soil	\$11.50	Each	75		\$ 862.50
PLANTS: Container, 2 gallon, medium soil	\$20.00	Each	109		\$ 2,180.00
TOTAL					\$ 7,687.50
INSTALLATION COSTS (LABOR, EQUIPMENT, & OVERHEAD)					
Type	Unit Price	Unit	Quantity	Description	Cost
Compost, vegetable, delivered and spread	\$37.88	CY	5.00		\$ 189.40
Labor, general (landscaping other than plant installation)	\$40.00	HR	10.00		\$ 400.00
Labor: Consultant, supervising	\$55.00	HR	2.00		\$ 110.00
Watering, 1" of water, 50' soaker hose	\$3.62	MSF	1.00		\$ 3.62
Irrigation - temporary	\$3,000.00	Acre	0.09		\$ 255.79
TOTAL					\$ 958.81
ITEMS	Percentage of Construction Cost	Unit	Quantity	Description	Cost
Mobilization	10%	1	1		\$ 864.63
Contingency	30%	1	1		\$ 2,593.89
TOTAL					\$ 3,458.52
MAINTENANCE AND MONITORING					
Larger than 5,000 sq.ft. but < 1 acre buffer					
Maintenance, annual (by owner or consultant)	\$160	Each	5.00		\$ 800.00
Monitoring	\$975	Each	5.00		\$ 4,875.00
TOTAL					\$ 5,675.00
Total					\$17,780



EXISTING IMPERVIOUS SURFACE IN STREAM BUFFER	<div></div>	4,233 SF (1,531 SF TO BE ELIMINATED)
EXISTING IMPERVIOUS SURFACE IN STREAM SETBACK	<div></div>	2,861 SF (1,666 SF TO BE ELIMINATED)
PROPOSED IMPERVIOUS SURFACE IN STREAM BUFFER	<div></div>	4,772 SF TO BE ADDED
PROPOSED IMPERVIOUS SURFACE IN STREAM SETBACK	<div></div>	1,015 SF TO BE ADDED
PROPOSED NATIVE PLANTINGS IN STREAM BUFFER	<div></div>	3,714 SF TO BE ADDED

TYPE F STREAM BUFFER AND SETBACK CHANGES

Stream Buffer and Setback	--- Buffer ---			--- Setback ---			Total Change
	Existing	Proposed	Change	Existing	Proposed	Change	
Impervious Surface, 0-50'	4233	7474	3241				
Lawn/Garden/Weeds, 0-50'	20176	13221	-6955				
Native vegetation 0-50'	1476	5190	3714				
Impervious Surface, 50'-100'				2861	2210	-651	
Lawn/Garden/Weeds, 50'-100'				6074	6725	651	
Native vegetation 50-100'				2202	2202	0	
Impervious Surface, 0-100'							2590
Lawn/Garden/Weeds, 0-100'							-6304
Native vegetation 0-100'							3714

LAKE SAMMAMISH SETBACK CHANGES

Shoreline Area	Existing	Proposed	Change
Impervious Surface, 0-50'	175	0	-175
Lawn/Garden/Weeds, 0-50'	4286	3755	-531
Native vegetation 0-50'	0	706	706

MITIGATION PLAN - LAYOUT

APPLICANT: TARA JOHNSON

1864 W. Lake Samm. Pkwy SE

Bellevue Washington 98008

November 23, 2020

Sheet 1 of 3

PLANTING DETAILS

A plant pallet is provided below based on review of site specific conditions which are generally dry (not subject to inundation) and sunny. Precise plant locations will be determined by the owner and landscaper at the time of installation. Locations will be as demonstrated in the City of Bellevue's Critical Areas Handbook using the template for Stream Buffers on Gentle Slopes in Sunny Sites.

The following plant requirements are based on 3,714 sf to be planted adjacent to Phantom Creek as shown in the green shaded area on Sheet 1.

- Trees to be planted 9' o.c.: at 81 sf per tree, and 11 existing trees in the planting area = 35 trees
- Shrubs to be planted 5' o.c.: at 25 sf per shrub = 149 shrubs
- Groundcovers to be planted 2' o.c.: at 4 sf per plant = 929 plants

A minimum of three species from each plant category shall be selected.

PLANT NAME AND SPECIES	SIZE
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GROUNDCOVERS - 929 total

KINNIKINNIK (<i>Arctostaphylos uva-ursi</i>)	4"
PACIFIC BLEEDING HEART (<i>Dicentra formosa</i>)	4"
WILD GINGER (<i>Asarum caudatum</i>)	4"
LILY-OF-THE-VALLEY (<i>Maianthemum dilatatum</i>)	4"

SHRUBS - 149 total

NOOTKA ROSE (<i>Rosa nutkana</i>)	2-GAL
SNOWBERRY (<i>Symphoricarpos albus</i>)	2-GAL
DEER FERN (<i>Blechnum spicant</i>)	1-GAL
SWORD FERN (<i>Polystichum munitum</i>)	1-GAL
PACIFIC RHODODENDRON (<i>R. macrophyllum</i>)	2-GAL
LOW OREGON GRAPE (<i>Mahonia nervosa</i>)	1-GAL
SALAL (<i>Gaultheria shallon</i>)	1-GAL
RED FLOWERING CURRANT (<i>Ribes sanguineum</i>)	2-GAL

TREES - 35 total

BIG LEAF MAPLE (<i>Acer macrophyllum</i>)	2-GAL
WESTERN YEW (<i>Taxus brevifolia</i>)	2-GAL
RED ALDER (<i>Alnus rubra</i>)	2-GAL
DOUGLAS FIR (<i>Pseudotsuga menziesii</i>)	2-GAL

MITIGATION PLAN - DETAILS

APPLICANT: TARA JOHNSON
1864 W. Lake Samm. Pkwy SE
Bellevue Washington 98008

November 17, 2020

Sheet 2 of 3

PLANTING DETAILS

PLANT INSTALLATION

1. Plant materials shall be nursery grown or collected in the Puget Sound area. Plants shall be normal in pattern of growth, healthy, well-branched, vigorous, with well-developed root systems, and free of pests and diseases. Damaged, diseased, pest-infested, scraped, bruised, dried out, burned, broken, or defective plants will be rejected.
2. If selected species are not available or desirable, then similar species may be substituted with approval from owner and City of Bellevue.
3. Planting shall occur during the cool season (September 15 through March 15).
4. Landscaper shall examine soils in the area to determine suitability for selected plants. New topsoil or compost amendment shall be added to a depth of 12" where necessary to support plants.
5. Immediately after planting, plants shall be watered to saturation.
6. Planting locations shown on the plan are approximate. Actual planting locations shall be field determined at time of planting by landscape architect or biologist. If significant changes are made, an as-built plan shall be prepared and submitted to the City of Bellevue. A minimum of 3,714 sf of new plantings shall be installed and maintained.
7. Provide good quality landscape mulch around all shrubs. This can be omitted around grasses.

LANDSCAPING MAINTENANCE

1. Controlling any non-native species and re-establishing native vegetation are the primary goals of this maintenance plan. Activities required to maintain new plantings include initial watering of the new plants, and periodic removal of non-native vegetation (weeding) within the planting area.
2. New plantings shall be watered from May through mid-October during the first season. A temporary irrigation system is allowed. A potable water source is available for this use.
3. Due to the aggressively invasive habit of many non-native species around Lake Sammamish, and the existence of nearby seed sources, control efforts shall be completed for five years following initial plant installation. Establishment of native plantings over the five year time period will create a well established native habitat lessening the chance for non-native vegetation invasion.
4. The control of invasive weeds (competing grasses and herbs) shall be mechanically provided throughout the planting area at a minimum of twice per year, or more should additional weeding be deemed necessary. The optimal season for weed control occurs in April thru September. The use of herbicides and pesticides after new planting operations is strictly prohibited unless given written permission by the City of Bellevue. All work shall be performed by hand with the lightest possible equipment.

MONITORING

- 1) Compliance monitoring consists of evaluating the plants and shoreline planting area immediately after plant installation. The objective is to verify that all design features, as agreed to in the plans, have been correctly and fully implemented, and that any changes made in the field are consistent with the intent of the design. Evaluation of the planting areas after restoration will be done by the homeowner. A brief compliance report will be prepared describing final plant counts and noting any substitutions or movement of plants when compared to the design. Rationale for changes shall be provided. Three photo points will be established giving complete coverage of the buffer area.
- 2) Long Term Monitoring – New plantings will be monitored in the summer once a year for a five year period. Monitoring will be conducted by the homeowner to quantify the survival, relative health and growth of plant material. An annual monitoring report submitted to the City following each years monitoring visit will describe and quantify the status of the mitigation and provide the three photos from the same locations as the compliance report.

Vegetation monitoring will consist of plant inspection to determine the health and vigor of the installation. All planted material in the buffer will be inspected during each monitoring visit to determine the level of survival of the installation. Each shrub and tree will be rated either as dead, dying, or healthy. Dead or dying material will be replaced the following fall unless plant crowding is believed to be a problem. Plant species substitutions may be made if site conditions are believed responsible for plant mortality. Replacement plants must be approved by the City. Volunteer native, non-invasive species will be included as acceptable components of the mitigation project. Ground covers will be rated as percent ground coverage for each of the major areas covered with these species.

At least three photo points will be established giving complete coverage of the buffer area. Photos will be taken at each point during every monitoring visit and submitted as part of the annual monitoring report.

PERFORMANCE STANDARDS

Year 1 (from date of plant installation)

- 100% survival of all installed plants and/or replanting in following dormant season to reestablish 100% of original plantings
- Less than 10% coverage of invasive plants in planting area.

Year 2 (from date of plant installation)

- At least 90% survival of all installed material (100% of trees)
- Less than 10% coverage of planting area by invasive species or non-native/ornamental vegetation.

Year 3, 4, & 5 (from date of plant installation)

- At least 85% survival of all installed material (100% of trees)
- At least 35% (Yr3), 50% (Yr4), 70% (Yr5) coverage of the planting area by native plants in each year respectively.
- Less than 10% coverage by invasive species or non-native/ornamental vegetation.

MITIGATION PLAN - DETAILS

APPLICANT: TARA JOHNSON

1864 W. Lake Samm. Pkwy SE
Bellevue Washington 98008

November 17, 2020

Sheet 3 of 3

